

Preventing Secondary Transmission of HIV

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PREVENTION COUNSELING

Interventions to prevent transmission of HIV are key components of the management of HIV infection, yet multiple studies show that prevention is frequently neglected in clinical practice. Each patient encounter provides opportunities to reinforce HIV prevention messages—messages that patients often look to their providers to deliver but may fail to receive [1-2]. Despite the challenges to providing effective prevention interventions in a busy practice setting, multiple approaches are available, including formal guidance from the Centers for Disease Control and Prevention (CDC) for incorporating HIV prevention into medical care settings [3]. Such interventions have been demonstrated to be effective in changing sexual risk behavior [4-6] and can reinforce self-directed behavior change early in diagnosis [7].

The CDC has identified prevention interventions for HIV-infected people that meet stringent criteria for efficacy and scientific rigor [8] and three that demonstrated efficacy in treatment settings (Options, Partnership for Health, and Positive Choices). The interventions are available through CDC trainings and materials, delivered as brief messages by providers or via laptop computer, and are readily implemented into busy clinics (<http://www.cdc.gov/hiv/topics/research/prs/index.htm>).

Evidence also exists regarding the efficacy of interventions to reduce injection drug use risk behavior. These include both behavioral interventions [9-11] and opiate substitution treatment with methadone [12-13].

There is evidence of increases in HIV risk behaviors among infected persons coinciding with the availability of potent combination antiretroviral therapy (ART). In some cohorts the rate of reported risk behaviors almost doubled compared with rates in the era prior to such therapies [7]. A meta-analysis of studies of HIV risk behaviors demonstrates that the prevalence of unprotected sex acts increased in those who believed that receiving ART or having a suppressed viral load protects against transmitting HIV [14]. Attitudinal shifts away from safer sexual practices since the availability of potent ART underscore the role for provider-initiated HIV prevention counseling. With wider recognition of the concept that effective treatment may decrease the probability of transmission, it is particularly important for providers to help patients understand that a sustained viral load below the limits of detection will dramatically reduce but does not absolutely assure the absence of virus in the genital and blood compartments, and hence the inability to transmit virus to others [14-15].

Additionally, given the role of sexually transmitted infections (STIs) as facilitators of HIV transmission, an essential adjunct to prevention counseling is the routine screening and symptom-directed testing for STIs, as recommended by CDC [3].

ANTIRETROVIRAL THERAPY AS PREVENTION

ART does have a role in preventing HIV transmission. Lower levels of plasma RNA have been associated with decreases in the concentration of virus in genital secretions [16-17]. Observational studies have demonstrated a decreased rate of HIV transmission among serodiscordant heterosexual couples following antiretroviral (ARV)-induced viral suppression in the absence of concomitant STIs. Multiple studies have demonstrated a direct correlation between HIV inoculum size (i.e., viral load) and probability of transmission [18-19]. Although some data suggest that the risk of heterosexual HIV transmission is low when an individual's viral load is <40 copies/mL, these data are contingent upon several assumptions, including: (1) completely suppressed viremia; (2) complete adherence to an effective ARV regimen; and (3) the absence of a concomitant STI. Detection of HIV RNA in the genital secretions has been documented in individuals with controlled plasma HIV RNA [20-21]. Moreover, it is critical that any biological reduction in infectivity not be offset by increases in risk behavior (i.e., risk compensation).

SUMMARY

In summary, consistent and effective use of ART resulting in a sustained reduction in viral load, in conjunction with consistent condom usage, safer sexual and drug use practices, and detection and treatment of STIs are essential tools for prevention of sexual and blood-borne transmission of HIV. Given these important considerations, medical visits provide a vital opportunity to reinforce HIV prevention messages, discuss sexual- and drug-related risk behaviors, diagnose and treat intercurrent STIs, and develop open communication between provider and patient.

References

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